REMARKS

The final Office Action issued June 14, 2006 has been reviewed, and the comments of the U.S. Patent Office have been considered. In accordance with the Examiner's Notes at page 2 of the Detailed Action, the claim list has been renumbered so as to correctly enumerate claims 1-153. Claims 1, 27-35, 48-51, 135, 137 and 151 stand rejected, and claims 2-26, 36-47, 52-54 and 58-134 stand withdrawn from consideration. Applicants thank the Examiner for the allowance of claims 55 – 57 and the indication of allowable subject matter with regard to claims 136, 138-150, 152 and 153. In view of the allowable subject matter, claims 1, 135 and 137 have been canceled and claims 27, 29, 48, 136, 138, and 145-153 have amended. Accordingly, claims 2-134, 136, 138-153 are currently pending. Applicants assert that the amendments to claims 27, 29, 48, 136, 138, and 145-153 place the application in condition for allowance over the prior art of record and/or better form for appeal. As such, entry of the proposed amendment is requested.

Claims 1, 27, 29 and 48-51 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hodgman, Jr., U.S. Patent 2,155,990. Claims 1, 27-35, 48-51, 135, 137 and 151 further stand rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dolan, U.S. Patent Application Publication 2002/0050531. The Examiner has stated that claims 136, 138-150, 152 and 153 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to claims 1, 27, 29 and 48-51 the Examiner continues to maintain that claims 1, 27, 29 and 48-51 are not patentably distinct because (i) the sprinklers of Hodgman and Dolan inherently have a rated K-factor, (ii) the flow rate of a sprinkler can be determined by $Q = K(p)^{1/2}$, and (iii) all the structural limitations of the claims are purportedly taught by the prior art. *See* Detailed Action at 9-10. Applicants continue to respectfully disagree with the Examiner's position, and kindly remind the Examiner that in order to establish inherency:

> [T]he extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient."

MPEP § 2112 (citations omitted). Despite the Examiner's recitation of the known formula of $Q = K(p)^{1/2}$ and the assertion that the sprinklers of Hodgman and Dolan inherently have rated K-factors, applicants maintain, as stated in the April 28, 2006 Amendment Response, that the Examiner has not provided the adequate basis in fact or technical reasoning to reasonably support a determination, necessarily stemming from the teachings of Hodgman or Dolan, that the sprinklers of Hodgman or Dolan inherently show or describe a flow of fluid from the outlet of the sprinkler that is "at least 95 percent of the rated K-factor multiplied by the square root of the pressure of the flow of fluid fed into the inlet of the structure in pounds per square inch gauge." *See* MPEP § 2112. Moreover, the Examiner has not provide such basis or technical reasoning in view of applicants' discovery, as stated in the application as originally filed at page 5, paragraph number [0010], that known sprinklers fail to provide an actual flow rate from the outlet at an expected tolerance level, as based upon the discharge coefficient for which the known sprinklers

purport to provide at various pressures provided to the inlet prior to actuation of the known sprinkler.

To reiterate the arguments already of record, applicants again submit that the Examiner has relied upon generalized depictions, descriptions and silence regarding fluid flow and sprinkler operations to conclude that Hodgman and Dolan each inherently have a K-factor rating defining an expected flow-rate. The Examiner does not point to any teaching in either of the cited references that would support an inherent showing "that the flow of fluid from the outlet of the structure is at least 95 percent of the rated K-factor multiplied by the square root of the pressure of the flow of fluid fed into the inlet of the structure in pounds per square inch gauge."

The Examiner relies on Figure 3 and page 2, lines 20-39 of Hodgman showing and describing water flowing "unobstructed" through the inlet port and out the outlet to the deflecting structure to conclude that the sprinkler device of Hodgman would inherently have a K-factor rating defining an expected flow rate. *See* Detailed Action at 4. However, nothing cited by the Examiner supports a determination, inherent or otherwise, that the flow of fluid from the outlet of the structure in Hodgman is at least 95 percent of the rated K-factor multiplied by the square root of the pressure of the flow of fluid fed into the inlet of the structure in pounds per square inch gauge. The Examiner's only support for this conclusion is applicants' own disclosure.

With regard to Dolan, the Examiner relies on the silence in Dolan to draw the conclusion of inherent disclosure. The Examiner concludes that "there is nothing in the disclosure of Dolan that would indicate that the water flow rate through the device would be at

an unacceptable level." *See* Detailed Action at 6. After formulating this conclusion, the Examiner utilizes the teachings of applicant's own disclosure, in the face of Dolan's silence to hypothesize that the device of Dolan would inherently have a K-factor rating defining an expected flow rate, and because "one would reasonably expect the device of Dolan to provide an acceptable flow rate, one can reasonably conclude that the flow of fluid from the outlet of Dolan is at least 95 percent of the inherent K-factor rating." *Id.* However, nothing cited by the Examiner supports a determination, inherent or otherwise, that the flow of fluid from the outlet of the structure in Dolan is at least 95 percent of the rated K-factor multiplied by the square root of the pressure of the flow of fluid fed into the inlet of the structure in pounds per square inch gauge.

Because Hodgman and Dolan fail to expressly or inherently, show or describe a sprinkler in which "the flow of fluid from the outlet of the structure is at least 95 percent of the rated K-factor multiplied by the square root of the pressure of the flow of fluid fed into the inlet of the structure in pounds per square inch gauge," Hodgman and Dolan fail to show each and every feature of the claimed inventions, and therefore applicants continue to submit that claims 1 and 51 are patentable over the cited art.

With regard to independent claim 51 and its recitation of "means for repositioning the central axis of the face . . . so that a flow of fluid . . . is at least 95 percent of the rated K-factor multiplied by the square root of the pressure," Applicants further maintain, as stated in the April 28, 2006 Amendment Response, that the Examiner has not satisfied the requisite burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure,

material, or acts described in applicants' specification which has been identified as corresponding to the claimed means or step plus function.

Applicants again kindly remind the Examiner that application of a prior art reference in the examination of a means-plus-function claim limitation requires that the applied prior art element perform the identical function specified in the claim. *See* MPEP § 2183. If the prior art reference teaches identity of function, (which the Examiner purports Hodgman and Dolan to do with regard to claimed function of claim 51) then the Examiner has the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function. *Id.* The Examiner has not satisfied the requisite burden of proof for showing Hodgman or Dolan to have structure that is the same or equivalent to the structure, material, or acts described in applicants' specification which has been identified as corresponding to the claimed means plus function of claim 51. For example, the Examiner has not established a *prima facie* case of equivalence between the structure shown and described in applicants' specification in the elected species of Group C and the structure of Hodgman or Dolan. Thus, claim 51 is patentable over the prior art for at least this reason.

The Examiner, in the alternative, asserts that claims 1 and 51 are rendered obvious under Section 103(a) and 102(e) respectively in view of Hodgman or Dolan. Specifically, the Examiner alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust or modify the disclosed parameters of the device of either Hodgman or Dolan in order to ensure that the flow of fluid from the outlet is provided at an acceptable and optimum level. *See* Detailed Action at 4 & 6. However, the Examiner does

not point to any teaching, suggestion or motivation to modify either device of Hodgman or Dolan to reach the claimed flow of fluid. The only motivation to modify the cited references is applicants' own disclosure. Because there is no teaching or suggestion in either Hodgman or Dolan to modify their respective sprinklers to reach the claimed flow of fluid, Hodgman and Dolan fail to teach the claimed inventions as a whole. Accordingly, claims 1 and 51 are patentable over the cited references.

Accordingly, applicants continue to disagree with the Examiner, and therefore again submit that neither Hodgman nor Dolan expressly or inherently show or describe, or otherwise teach or suggest, a dry sprinkler that includes, *inter alia*, an arrangement of components that provide flow of fluid from the outlet of the structure that is "at least 95 percent of the rated K-factor multiplied by the square root of the pressure of the flow of fluid fed into the inlet of the structure in pounds per square inch gauge."

With regard to independent claims 135 and 137, the Examiner asserts that Figures 2 and 3 of Dolan shows a dry sprinkler having a structure including a member (25) having a first surface secured to the inner surface of the passageway (pin (26)) and a second surface (25b) disposed in the passageway, and a metallic disc annulus/closure assembly (23) having a first position axially spaced from the member for occluding the passageway, the annulus/closure assembly having a second position skewed from the longitudinal axis so that fluid can flow from the outlet, the annulus/closure assembly contacting the second surface of the member as the annulus/closure assembly is displaced from the first position to the second position. Specifically with regard to claim 137, the Examiner further asserts that the top surface (23c) of Dolan provides the claimed surface of the closure assembly in claim 137 when the closure assembly of

Dolan is in at least the first position of Figure 2. *See* Detailed Action at 7. Contrary to the Examiner's assertions, applicants respectfully disagree.

Claim 135 recites a dry sprinkler comprising, *inter alia*, a member having a first surface secured to the inner surface of the passageway and a second surface disposed in the passageway, a metallic disc annulus having a first position . . . axially spaced from the member . . . , the annulus having a second position . . ., the annulus contacting the second surface of the member as the annulus is displaced from the first position to the second position." (emphasis added) Dolan does not show or describe an annulus contacting a surface of a member "as the annulus is displaced from the first position to the second position," as claimed. Instead, Dolan shows the purported metallic disc annulus (valve seal (23)) in constant contact with the purported second surface of the member (distal end of strut (25)) as the valve seal is moved from its closed position in Figure 2 to its open position in Figure 3. Because Dolan fails to show an annulus contacting a surface of a member as the annulus is displaced from the first position to the second position, applicants contend that Dolan fails to show each and every feature of independent claim 135.

Claim 137 specifically recites a dry sprinkler comprising, *inter alia*, "a member having a first surface . . . and a second surface . . . a closure assembly including a surface, the closure assembly having a first position substantially aligned with the longitudinal axis . . . , the closure assembly having a second position skewed from the longitudinal axis . . . , at least a portion of the closure assembly engaging the second surface of the member to move from the first position to the second position and the surface of the closure assembly being axially spaced from the second surface of the member in at least one of the first and second positions."

(emphasis added) Dolan does not show or describe a closure assembly having a portion engaging the second surface of the member to move from the first position to the second position. Instead, Dolan shows the valve seal (23) in constant contact with the strut (25). The strut 25 has a distal end (25b) which movably supports the valve seal (23) into the closed position by applying a sealing force. *See* Dolan at 4, paras [0048] & [0050], FIG. 2. Further according to Dolan, the rotational and axial movement of the strut 25 releases the sealing force from the valve seal 23. *See id.* at para [0053]. Because Dolan fails to show or describe a closure assembly engaging a member "to move from a first position to a second position," applicants further contend that Dolan fails to show or describe each and every feature of claim 137.

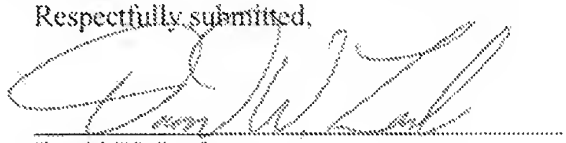
Notwithstanding applicants' disagreement with the claim rejections and in the interest of advancing prosecution of this application towards allowance, applicants have canceled independent claims 1, 135, and 137. However, applicants expressly reserve the right to pursue the subject matter and scope of claims 1, 135 and 137 in any subsequent continuation or divisional application. To further advance prosecution of this application toward allowance, claims 136, 138, 152, and 153 have been rewritten in independent form including all the limitations of the rejected based claim and any other intervening claims from which claims 136, 138, 152 and 153 previously depended. Claims 27, 29, 48, have been amended so as to depend from now independent claim 152 and claims 145, 147-151 have been amended so as to depend from now independent claim 138. Accordingly, at least claims 27-35, 48-51, 55-57, 136, 138-153 are in condition for allowance or at least better form for appeal.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration of this Application and the prompt allowance of at least claims 27-35, 48-51, 55-57, 136, 138, 145-153. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the undersigned to expedite prosecution of the application.

The Commissioner is hereby authorized by this paper to charge any fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-3081. **This paragraph is intended to be a CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R. § 1.136(a)(3).**

Respectfully submitted,



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